EXCISION OF THE SCAPULA.

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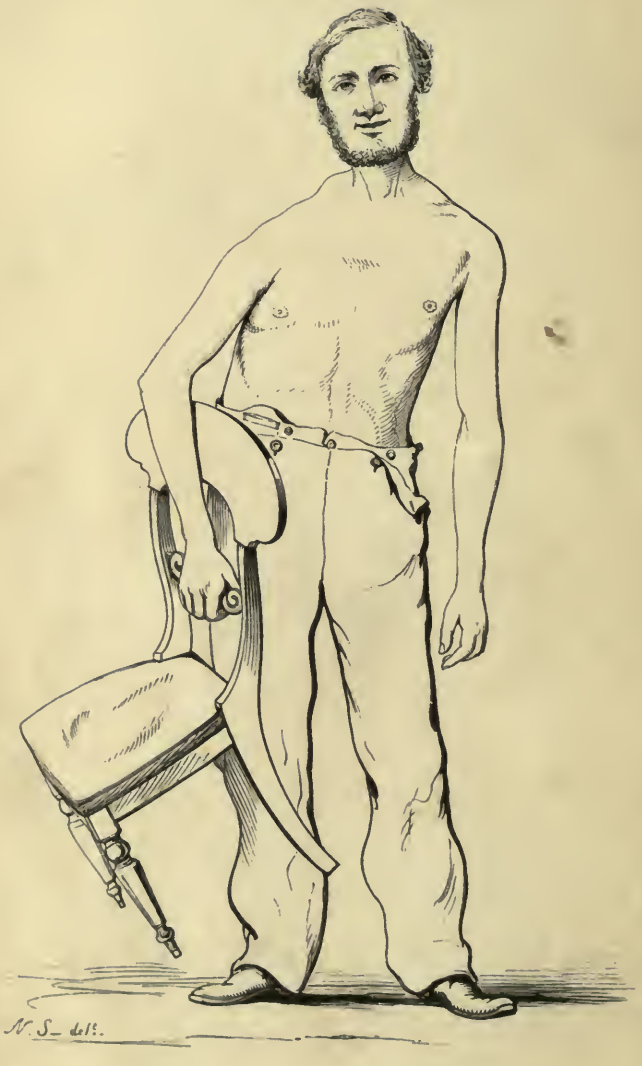

EXCISION OF THE SCAPULA

BY

JAMES SYME, F.R.S.E.,

SURGEON IN ORDINARY TO THE QUEEN IN SCOTLAND;

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH;

MEMBER OF THE GENERAL MEDICAL COUNCIL.

Knight of the Danish Order Dannebrog; Hon. Member of the Royal Belgian Academy of Medicine; Hon. Member of the Russian University of Cracow; Foreign Associate of the Surgical Society of Paris; Hon. Member of the Medical Society of Hamburg; Hon. Member of the Medical Society of Stockholm; Hon. Member of the Medical Society of Bombay; Hon. Member of the Medical Society of Athens; Hon. Member of the Medical Institute of Egypt; Hon. Member of the Royal Medical Society of Edinburgh, etc. etc. etc.

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PREFACE.

In the present advanced state of Surgery, any real addition to its resources must be regarded as a subject of interest, and I therefore venture to hope that the following account of an entirely new operation will be deemed worthy of separate publication.

ILLUSTRATIONS.

EXCISION OF THE SCAPULA.

CASE I.

On the 18th of September 1856, an old woman named Janet Scott, about seventy years of age, was admitted into the Royal Infirmary, on account of a large tumour involving the left scapula. In size and form it resembled a cocoa-nut, its consistence in some parts presenting the hardness of bone, and in others being elastic but firm. A distinct aneurismal bruit could be perceived throughout the swelling, which also communicated a strong pulsatory movement to the hand when placed over it. The patient stated that she had first noticed the enlargement about six months before the time of her application, when it was the size of an orange, and had suffered little inconvenience from it until a recent period,

when, not only from rapidly increasing, but also from causing painful sensations, it had rendered her unable to discharge the duties of a domestic servant in the country.

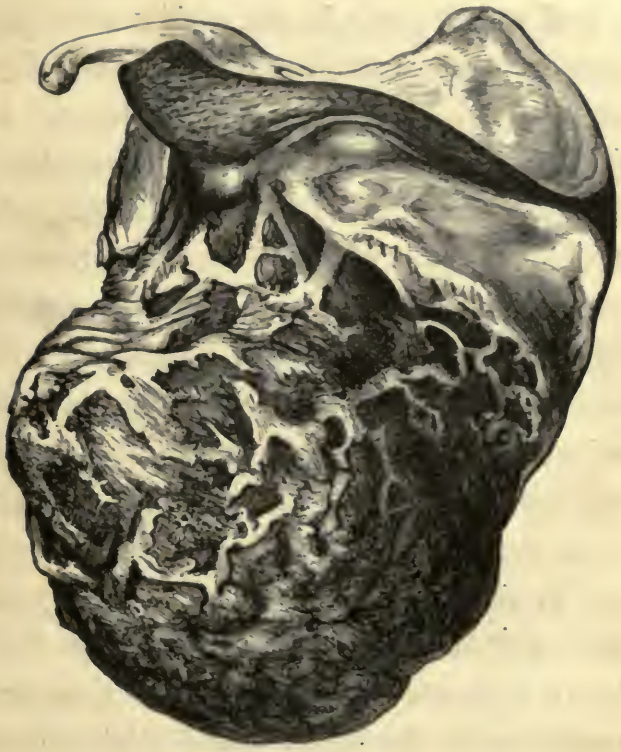
As the growth extended into the axilla, it was evidently impossible to afford relief by any partial removal of the scapula, and as amputation of the arm, together with the tumour, independently of the objection that might be expected from the patient to so extensive a mutilation, appeared altogether hopeless of success at her advanced time of life, I took into consideration the practicability of removing the affected bone alone. The tumour, if not aneurismal, was evidently very vascular, and I knew from the previous experience of partial operations, that the removal of the whole bone could not be accomplished without a formidable amount of hæmorrhage. On the other hand, I thought there was reason to expect that, if the subscapular artery were secured at an early part of the process, the clavicular and humeral attachments might be separated without much loss of

blood, and that then the remaining connections would admit of such a rapid division as to place the cut vessels almost immediately within reach of compression. It also appeared probable that, if the object were thus accomplished without an excessive drain on the patient's strength, there would not be any other serious obstacle to recovery, or threatening source of danger, and I therefore resolved to perform the operation.

On the 1st of October, the patient being fully under the influence of chloroform, and placed upon her right side, I made an incision from the acromion process transversely to the posterior edge of the scapula, and another from the centre of this one directly downwards to the lower margin of the tumour. The flaps thus formed being reflected without much hæmorrhage, I separated the scapular attachment of the deltoid, and divided the connections of the acromial extremity of the clavicle. Then, wishing to command the subscapular artery, I divided it with the effect of giving issue to a fearful gush of blood, but fortunately caught the vessel and tied

it without any delay. I next cut into the joint and round the glenoid cavity, hooked my finger under the coracoid process so as to facilitate the division of its muscular and ligamentous attachments, and then pulling back the bone with all the force of my left hand, separated its remaining attachments with rapid sweeps of the knife. The vessels requiring ligature having been tied, the edges of the wound were stitched together and covered with dry lint, a bandage being lastly applied round the chest to give proper support, and keep the arm in its place.

The tumour, when examined, was found to consist of a nearly uniform expansion of the bone into a bag, partly membranous, partly osseous, containing a soft very vascular growth of the cerebriform kind. It may be seen from the representation here given, that this condition, not only extended up to the spine of the scapula, but also implicated the margin of the glenoid cavity, so that any operation which did not reach the joint could not have extirpated the whole existing disease.



Everything went on favourably after the operation, and a great part of the wound healed by the first intention. The discharge, which was at first rather copious and thin, in the course of a few days diminished to an amount so small, as to remove all apprehension of its exhausting the patient, especially as she retained

a good appetite, even for the porridge which had been her principal article of diet previously, slept soundly, and presented a cheerful aspect. At the end of a fortnight the discharge was reduced to little more than sufficient for staining the bandage, so that it seemed as if complete recovery would very soon be accomplished. But through an opening about an inch in length, where the edges of the transverse incision remained ununited, the head of the humerus could be seen still covered with its cartilage, which, however, in the course of another week began to disappear, and to give place to granulations gradually extending from the neck over the convexity of the bone; while the cavity at the same time contracted until the humerus and clavicle came nearly into contact, and the shoulder, especially when viewed in front, assumed a wonderfully natural appearance. The patient, who from an early period after the operation had with difficulty been restrained from using the arm too freely, again and again declared that it was in no wise inferior to the sound one, and it appeared,

indeed, that through the support afforded by the clavicular portion of the deltoid, together with the action of the pectoralis and latissimus dorsi, the limb would be able to execute a fair degree of motion.

While the local state of matters was thus proceeding in the most favourable and satisfactory manner, it could not escape observation that the patient's strength did not improve in a corresponding degree. On the contrary, without any reason that could be discovered except the decay of old age, she gradually became weaker and more emaciated, though still retaining appetite for food, and performing her bodily functions with so much appearance of health as still to encourage the hope of ultimate recovery. But towards the end of November symptoms of sinking suddenly presented themselves, and terminated in death on the 1st of December.

Although it would have no doubt been more satisfactory if the patient had lived longer, it is evident that the progress of her case was sufficiently advanced for the settlement of some

points possessing practical importance. It thus appears, in the first place, that the entire scapula may be disarticulated from the shoulder-joint without loss of blood to any great extent; 2*dly*, that the wound resulting from this operation does not necessarily occasion an excessive amount of discharge; and, 3*dly*, that the arm which remains is not a useless appendage, but a serviceable limb. The value of these facts will of course depend upon the field admitting of their application to practice; and the extent of this can hardly be determined at present, since morbid conditions, involving the whole scapula having been hitherto regarded as irremediable, may not have seemed deserving of record. One remarkable case, which would have afforded an excellent opportunity for performing the operation, is strongly impressed upon my memory. I allude to that of the boy whose history Mr. Liston has related in his "Elements of Surgery," and more fully in the "Edinburgh Medical and Surgical Journal" for 1820. The patient, a youth sixteen years of age, had come from the country on

account of a tumour involving the scapula, and been dismissed from the Royal Infirmary as incurable. He was then placed under the care of Mr. Liston, who, finding that the growth was confined to the bone, and that it moved freely over the ribs, resolved to operate. The tumour, which was about the size of an orange, had been first perceived about three months before, situated immediately below the spine of the scapula, not larger than a filbert, of a flat form, and attended with distinct pulsation. It subsequently increased with great rapidity until it extended from the inferior angle over two-thirds of the scapula. It was uniformly convex, and possessed a very firm consistence, but yielded under strong pressure with a crackling sensation.

The external surface of the tumour was exposed without any difficulty; but when the operator attempted to separate its attachment to the spine of the scapula, such a gush of blood issued as to require the most energetic measures of suppression. The subscapular and other vessels concerned in this hæmorrhage having been

secured, Mr. Liston sawed across the scapula so as to leave merely its upper portion on a level with about a third part of the spine. The tumour was found to consist of an osseous shell composed of plates directed from the circumference towards the centre, and containing a coagulum of blood in its cavity. It has generally been regarded as an example of osteo-aneurism, but I believe was rather a form of cerebriform disease. Notwithstanding the patient's extreme exhaustion during and immediately after the operation, everything went on favourably until between five and six weeks, when a fungous excrescence appeared at the upper part of the wound. This was removed so as to expose the bone and allow it to be cauterized; but resisted the check thus opposed to its growth, and showed that so long as any portion of the scapula was permitted to remain, there could not be any reasonable expectation of recovery. Mr. Liston therefore proposed to remove the part which had been left at the former operation, together with the arm, but could not obtain the sanction of any surgeon in Edinburgh

for such a formidable proceeding, and did not feel warranted to undertake it upon his own responsibility. Nothing therefore was done, and the patient, after lingering in great misery and being finally exhausted by repeated hæmorrhages, died five months after the operation.

CASE II.

T. G., aged 43, from Alva, was admitted into the Hospital on the 9th of November 1860, suffering from a tumour of the right shoulder. It was situated under the deltoid, being about the size of a hen's egg, divided longitudinally, and having a very firm consistence, hardly distinguishable from that of the bone, to which it was inseparably attached. The patient stated that he had felt pain in the bone about six months before, and had not noticed the swelling until a considerable time afterwards, since which it gradually increased in size, with a corresponding aggravation of pain.

Unwilling to propose amputation at the shoulder-joint for a condition so little formidable in appearance—while there could be no doubt that this severe measure would in course of time become requisite, if the disease were allowed to advance until it assumed a more serious aspect—I considered the practicability of affording relief

in another way, and took for my guide the principle of practice which has been so well established in regard to tumours of the jaw, that nothing more is required for an effectual remedy in all curable cases than removing the morbid growth, so as to divide the bone in a sound part beyond the confines of the disease. The cases of maxillary tumours, which, when formerly treated by means of gouges and cauteries, applied directly to the seat of disease, uniformly proved miserable failures, are now remedied with such facility and certainty as contrast very favourably with the inefficiency of surgery in this department at no very distant date. Having thus reason to expect that removing the upper extremity of the humerus would be sufficient for the purpose, and knowing from the results of similar operations for caries that the arm, notwithstanding this shortening of the bone, would not be materially lessened in usefulness, I adopted the following procedure :—

On the 14th I made an incision from the coracoid process downwards to the extent of about

four inches, opened the joint, separated the muscular attachments from the tuberosities of the humerus, protruded the head of the bone through the wound, and sawed it off below the tumour, which was found to consist of a thick cyst, partly osseous at the base, and containing small cysts in its substance, resting on a rough slightly excavated surface. No vessels required to be tied, and the patient suffered hardly any local or constitutional disturbance. He was dismissed on the 4th of January 1861, and I saw him some months afterwards in perfect health, with the wound soundly healed, and an arm strong and useful from the elbow downwards.

About a year afterwards, my attention was called to a swelling which had appeared on the upper and back part of the shoulder. It was the size of an orange flattened in form, and of firm, elastic consistence, apparently originating from the scapula. Regarding the case as very serious, I advised delay, in order to ascertain more fully what extent of interference would be requisite. At the end of some months the patient returned with so

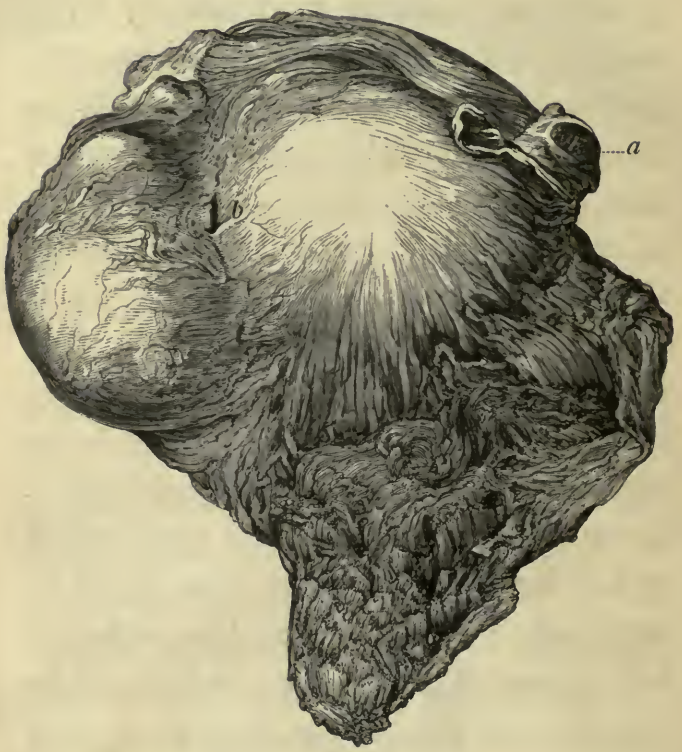
much enlargement of the tumour that I felt warranted to propose removal of the scapula along with the arm, and this offer having been declined, I saw no more of him until next November, that is, two years after the operation above related, when he was again admitted into the Hospital, suffering so much from the disease as to desire whatever might be thought necessary for his relief.

The tumour was now very large, presenting a convex surface over nearly the whole extent of the scapula, and completely filling the axilla, where it had swelled into two great round masses lying before and behind the vessels, so that any partial removal of the bone was quite out of the question. But having reconsidered the subject, and especially taken into account the perfectly sound state in which the arm bone remained, notwithstanding the unhealthy action that had been going on in its immediate neighbourhood, instead of the extensive mutilation formerly contemplated, I resolved to remove the scapula alone, in hopes of saving the arm.

On the 13th of November the operation was

performed as in the case which has been related, with the exception of taking away a portion of the clavicle to facilitate the procedure. I began by making an incision from that bone a little to the inner or sternal side of the coracoid process, directed downwards through the whole extent of the tumour to its lower boundary, and then another transversely from the shoulder to the posterior edge of the scapula. The flaps thus formed having been separated from their subjacent connections, I divided the clavicle at the part where it was exposed, and placed a piece of cord round its acromial extremity for an assistant to draw the tumour backwards while I separated its connections in the axilla, which required great care from the plexus of vessels and nerves being deeply imbedded between the large protuberances that lay there. After this had been accomplished, and the subscapular artery secured, the subsequent part of the operation was easily performed, by dividing the muscular attachments. The edges of the incisions were then stitched together by silver sutures and supported by a bandage.

There was neither so much difficulty nor so much bleeding in the operation as had been anticipated, and the patient on awakening from his chloroform slumber, did not appear in any respect different from what he had done previously. He suffered no local or constitutional disturbance; the next morning was observed to use the arm in taking his breakfast; and before the end of three weeks was able to write a letter with it. Every thing went on well afterwards, so that in six weeks the recovery might be considered complete. It was then seen that while the limb retained perfect mobility and strength from the elbow downwards, there still remained, or rather had been acquired, a considerable command over its movements at the shoulder, from the scapular muscles becoming united to each other and to the interjacent cellular texture. Heavy weights could be lifted with ease, as is shewn by the representation, which was taken from a photograph some months after the operation. The patient has since then enjoyed perfectly good health, and is now employed as a provincial letter-carrier.



a. The Clavicle. *b*. Sulcus in which the axillary plexus lay.

The tumour weighed between four and five pounds; it had a soft consistence, and very suspicious aspect, which was strengthened by microscopical examination, as the muscular substance that was taken away along with the growth

appeared to be loaded with the germs of future disease; but fifteen months having elapsed since the operation was performed, without the slightest appearance of relapse, it may be hoped that the recovery will prove permanent.

CASE III.

On the 23d of August 1862, Mr. K., a gentleman about 40 years of age, from Manchester, applied to me on account of a painful swelling in his left shoulder. It lay under the deltoid, which was nearly uniformly distended by a firm mass apparently originating from the bone, and enlarging its head to about twice the natural size. The patient stated that in 1860 he had over-exerted his arm by carrying a heavy weight, and in consequence of doing so, was for more than a month hardly able to raise it; that in September 1861 he began to feel an acute pain at one particular part of the shoulder, which increased gradually, until the following spring it became seriously distressing; that he went to Buxton in June or July without obtaining relief for what was supposed to be rheumatism,—that in August he went to London, and consulted two surgeons of eminence, who do not appear to have entertained, or at least expressed, any decided opinions on

the subject; and that he had therefore come to me.

I felt no hesitation in stating my belief that the symptoms proceeded from a morbid growth of the bone, and did not admit of remedy except by removal of the part affected, but to avoid any risk of unnecessary interference from the disease being merely periosteal, advised the application of one or two blisters and small doses of the iodide of potassium. On the 16th of September, finding that there had been no improvement under this treatment, I proceeded to cut out the head of the humerus, as in the case last related, with the effect of removing a fibro-cartilaginous growth not affecting the joint, but extending round the bone, and presenting an irregularly tuberculated or nodulated surface. The patient suffered no local or constitutional disturbance from the operation, and on the day three weeks from the time of its performance, was able to take a carriage-drive.

The arm soon became strong and serviceable, so that the recovery was deemed complete and

permanent. But, early in January 1863, a tumour was felt under the cicatrix, and suggested another visit to me.

Finding this new growth, which was about the size of a large walnut, quite movable and unconnected with the bone, I at once removed it, and found a thick fibro-cartilaginous cyst, with serous contents. The wound quickly healed, and we again hoped that the disease was eradicated. But very soon afterwards I was sorry to hear that a more formidable attack was threatened in the scapular region, where a large growth had become rapidly developed, extending into the axilla, and overlapping the end of the humerus. The opinion of Mr. Paget was then taken, and being strongly favourable to another attempt, I agreed to undertake it, but as the patient naturally felt averse to another long journey under such distressing circumstances, he requested me to perform the operation at Manchester, which I accordingly did on the 7th of May, assisted by Messrs. Smith and Beever of that city, and Mr. Annandale, who accompanied me.

As the arm, unfortunately, could not be preserved, instead of cutting in a crucial form, I made two semi-lunar incisions from the acromion process downwards, one on each side of the joint, and terminating at the lower angle of the scapula. The integuments were then dissected back so as to expose the tumour and afford access to the clavicle, which was divided by the saw and cutting-pliers a little nearer the sternum than the coracoid process. The scapular extremity of the clavicle being now held forcibly backwards, I divided the pectoral muscles, blood-vessels, and nerves, tied the axillary artery, and lastly, by free use of the knife quickly separated the remaining muscular attachments, so as to complete the operation without much delay or loss of blood, although no fewer than nineteen ligatures were required. The tumour, which presented precisely the same characters as those of the former growths, adhered inseparably to the glenoid cavity, neck of the scapula, and acromion process; thus rendering any less decided measure than the one adopted inadequate for the purpose.

Everything went on satisfactorily after the operation; the wound—of which the edges had been stitched together and supported by a bandage—healed so well, that at the end of three weeks the patient was out driving, and soon afterwards completely regained his usual good health. During the summer and early part of autumn there was occasionally a slight oozing of matter from the lower extremity of the incision, which was finally accounted for by the discharge of a very small scale of bone, since when all the parts concerned have been perfectly sound, and the patient, the last time I heard from him, had been following the hounds.

From what has been said, it appears,—

1st, That the entire scapula, either alone, or together with the arm, may be removed without much difficulty or loss of blood;

2d, That the wound thus inflicted may heal quickly and soundly;

3d, That the arm, if preserved, may be strong and useful.

I therefore trust that excision of the scapula will be recognized as a legitimate and established procedure of surgery.

FINIS.

In pocket : card
see front —